

## PATENT ABSTRACTS OF JAPAN

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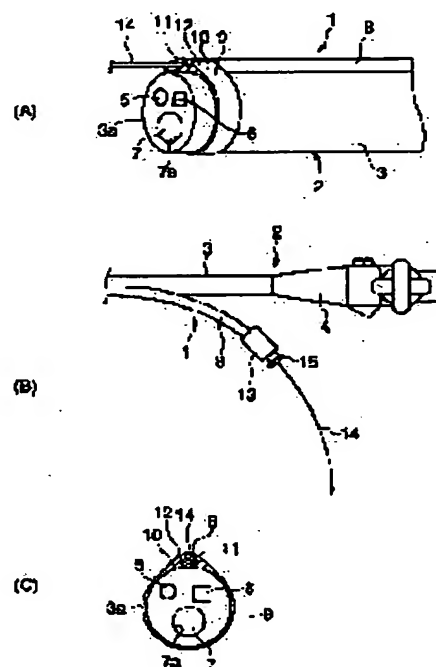
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## (54) OUTSIDE TUBE FOR ENDOSCOPE

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide an outside tube for an endoscope that can expand the kinds of usable endo-therapy accessories, improve the safety of endoscope technique and expand applied cases.

**SOLUTION:** A tube fixing ring 9 is provided for detachably engaging the tip part of a tube body 8 with the tip part of an insert part 3 of the endoscope 2. The engagement of the tube fixing ring 9 is released by the operation of a grip part 13 on the base end side of the tube body 8.



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**CLAIMS**

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**[Claim(s)]**

**[Claim 1]** The body of a tube is formed with the flexible tube installed in the hand control unit side by the side of the end face section along with the insertion section of said endoscope from the point of the insertion section of an endoscope. In the tube with outside for endoscopes with which said body of a tube is attached in the insertion section of said endoscope dismountable The tube with outside for endoscopes characterized by providing an engagement discharge means by which the actuation by the side of the engagement section which engages the point of said body of a tube with the point of the insertion section of said endoscope possible [ engaging and releasing ], and the end face section of said body of a tube cancels engagement of said engagement section.

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## DETAILED DESCRIPTION

## [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the tube with outside for endoscopes attached in an endoscope removable.

[0002]

[Description of the Prior Art] Generally, it is attached in the insertion section of an endoscope removable if needed, and the tube with outside for endoscopes which guides insertion of a treatment implement is shown in JP,11-192203,A, JP,2558354,Y, etc. Here, a tube with outside is fixed to JP,11-192203,A on an elastic band, a medical tape, etc., or the configuration attached in the insertion section of an endoscope through ring-like the cap for anchoring etc. is shown. Furthermore, the sheet-like anchoring section is prepared in JP,2558354,Y at the point of a tube with outside, and the configuration which attaches this anchoring section in the insertion section of an endoscope with a pressure sensitive adhesive double coated tape etc. is shown.

[0003]

[Problem(s) to be Solved by the Invention] Conventionally [above-mentioned], outside the configuration, with the elastic band, the medical tape, the pressure sensitive adhesive double coated tape, etc., it fixes to the insertion section of an endoscope, or the tube with outside is being fixed to the insertion section of an endoscope through the cap for anchoring etc. Therefore, in demounting the tube with outside attached in the insertion section of an endoscope from the insertion section of an endoscope, where extraction is carried out from a patient's inside of the body, an endoscope once Since it is necessary to demount an elastic band, a medical tape, a pressure sensitive adhesive double coated tape, etc. outside a body, or to do the troublesome activity which demounts the cap for anchoring etc., the activity takes time amount, and it carries out removing in the technique the tube with outside attached in the endoscope in difficulty, it is, and has a problem.

[0004] Moreover, since the class of treatment implement which can be inserted in the inside of the body through a tube with outside where an endoscope is inserted in a patient's inside of the body is restricted to a thing [minor diameter / bore / of a tube with outside], it has the problem which cannot use a treatment implement [major diameter / bore / of a tube with outside]. Therefore, there is a problem to which the application case of the endoscopic technique is restricted.

[0005] In addition, since the outer diameter of a tube with this outside also becomes large when the bore of a tube with outside is enlarged, in order to use a major diameter treatment implement, there is a problem on which the insertion nature of an endoscope is reduced.

[0006] This invention was made paying attention to the above-mentioned situation, and the purpose can expand the class of treatment implement which can be used, and is to offer the tube with outside for endoscopes which can aim at improvement in safety of the endoscopic technique, and expansion of an application case.

[0007]

[Means for Solving the Problem] The body of a tube is formed with the flexible tube with which this invention is installed in the hand control unit side by the side of the end face section along with the insertion section of said endoscope from the point of the insertion section of an endoscope. In the tube with outside for endoscopes with which said body of a tube is attached in the insertion section of said endoscope dismountable It is the tube with outside for endoscopes characterized by providing an engagement discharge means by which the actuation by the side of the engagement section which engages the point of said body of a tube with the point of the insertion section of said endoscope possible [engaging and releasing], and the end face section of said body of a tube cancels engagement of said engagement section. And the engagement section is made to engage with the point of the insertion section of an endoscope at the time of use of an endoscope, and a treatment implement is made to insert in in the body of a tube of a tube with outside in this condition by this invention. Moreover, in demounting the body of a tube of a tube with outside from the insertion section of an endoscope, actuation of the engagement discharge means by the side of the end face section of the body of a tube cancels engagement of the engagement section.

[0008]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the 1st of this invention is explained with reference to drawing 1 (A) - (C) thru/or drawing 4 (A), and (B). A part for the point of the insertion section 3 of the endoscope 2 with which drawing 1 (A) attached the tube 1 with outside of the gestalt of this operation for endoscopes, and drawing 1 (B) show the part of the hand control unit 4 connected with the end face section of the insertion section 3 of an endoscope 2, respectively.

[0009] Furthermore, as shown in drawing 1 (C), the lighting window part 5 in which the lighting lens was arranged, the observation window part 6 in which the objective lens was arranged, tip opening 7a of the treatment implement insertion channel 7, etc. are arranged in apical surface 3a of the insertion section 3 of an endoscope 2.

[0010] Moreover, the body 8 of a tube is formed with the flexible tube with which the tube 1 with outside for endoscopes is installed in the hand control unit 4 side by the side of the end face section along with the insertion section 3 of an endoscope 2 from the point of the insertion section 3 of an endoscope 2. Furthermore, the tube stop ring (engagement section) 9 attached in the point of the insertion section 3 of an endoscope 2 is formed in this tube 1 with outside for endoscopes. This tube stop ring 9 is being fixed to the point peripheral face of the insertion section 3 with means, such as immobilization by friction, and adhesion. Moreover, a part of insertion section 3 may make the tube stop ring 9 serve a double purpose.

[0011] As shown in this tube stop ring 9 at drawing 1 (C), the protrusion section 10 which protruded outward is formed in a part of hoop direction. The engagement slot 11 of the tube 1 with outside is formed in this protrusion section 10. This engagement slot 11 is formed in the cross-section configuration of the body 8 of a tube of the tube 1 with outside, and the configuration which carries out abbreviation correspondence. Here, the omission prevention section 12 of the tube 1 with outside with a flute width narrower than the diameter of the tube 1 with outside is formed in the open end of the engagement slot 11. And the body 8 of a tube of the tube 1 with outside is in the condition inserted in this engagement slot 11, and is engaged possible [engaging and releasing] according to frictional force. At the time of this engagement, it is prevented that the body 8 of a tube of the tube 1 with outside falls out in an exterior side from the open end of the engagement slot 11 by the omission prevention section 12 of the engagement slot 11.

[0012] Moreover, the major diameter grasping section 13 for grasping (engagement discharge means) is formed in the end face section of the body 8 of a tube of the tube 1 with outside. the mouthpiece for introducing a narrow diameter treatment implement or guide wire 14 into the end of this grasping section 13 — the section 15 is arranged.

[0013] Next, an operation of the tube 1 with outside of the gestalt of this implementation of the above-mentioned configuration for endoscopes is explained. It is set to the condition that guide wire 14 was beforehand inserted into the body 8 of a tube of the tube 1 with outside outside a patient's body when using it by the endoscopic operation, equipping the insertion section 3 of an endoscope 2 with the tube 1 with outside of the gestalt of this operation for endoscopes.

[0014] Then, you make it engaged in the condition of inserting the point of the body 8 of a tube of the tube 1 with outside in the engagement slot 11 of the tube stop ring 9 fixed to the point of the insertion section 3 of an endoscope 2 beforehand. It is set to the condition that the body 8 of a tube of the tube 1 with outside was installed in the hand control unit 4 side by the side of the end face section along with the insertion section 3 by this from the point of the insertion section 3 of an endoscope 2 as shown in drawing 1 (A) and (B).

[0015] In this condition, the insertion section 3 of an endoscope 2 is inserted into a patient's coelome. And after the insertion section 3 of an endoscope 2 is inserted in the location of the purpose in a patient's coelome, a narrow diameter treatment implement is inserted in the interior of the tube 1 with outside rather than the bore of the tube 1 with outside if needed. At this time, the treatment implement inserted in the interior of the tube 1 with outside is inserted in the inside of the body in the condition of having been guided to the guide wire 14 within the body 8 of a tube.

[0016] Moreover, as shown in drawing 3 (B), when inserting other treatment implements 16 thicker than the bore of the tube 1 with outside, for example, balun die RETA, into a coelome, exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2, and inserts balun die RETA 16 in the inside of the body is performed. Guide wire 14 is used at the time of this exchange, and it is carried out as it is a degree.

[0017] First, where the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside is grasped, hauling actuation of the body 8 of a tube is carried out at a hand side. As this operating physical force shows to drawing 2 (A), the body 8 of a tube of the tube 1 with outside is drawn out from the engagement slot 11 of the tube stop ring 9 at a hand side, and engagement in the insertion section 3 of an endoscope 2 and the tube 1 with outside is canceled. The activity which takes out only the tube 1 with outside outside of the body in the condition of having been continuously left guide wire 14 as it was and guided to this guide wire 14 in this condition is done.

[0018] Furthermore, after extraction of the tube 1 with outside, as shown in drawing 3 (B), as shown in drawing 4 (B), guide wire 14 is made a guide and another treatment implement 16, for example, balun die RETA, is inserted into a coelome. Where the point of guide wire 14 is grasped under observation of an endoscope 2 with the grasping forceps inserted in the inside of the body [at this time 7, for example, the treatment implement insertion channel of an endoscope 2], exchange with the tube 1 with outside and balun die RETA 16 is performed. In addition, it is not necessary to necessarily grasp the point of guide wire 14 with grasping forceps etc. For example, by using the guide wire 14 of about 2 times [of the die length of the tube 1 with outside] die length, where the hand side of guide wire 14 is grasped, exchange with the tube 1 with outside and balun die RETA 16 can be performed.

[0019] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. Namely, the engagement slot 11 of the tube 1 with outside is formed in the tube stop ring 9 fixed to the point peripheral face of the insertion section 3 of an endoscope 2 by the tube 1 with outside of the gestalt of this operation for endoscopes. While making the body 8 of a tube of the tube 1 with outside engage with this engagement slot 11 possible [engaging and releasing] In the condition of having made the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside grasping Hauling actuation of the body 8 of a tube is carried out at a hand side, and he draws out the body 8 of a tube of the tube 1 with outside from the engagement slot 11 of the tube stop ring 9 to a hand side, and is trying to make engagement in the insertion section 3 of an endoscope 2, and the tube 1 with outside cancel according to this operating physical force. Therefore, since the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body can be done without carrying out extraction of the insertion section 3 of an endoscope 2 from a patient's inside of the body by the tube 1 with outside of the gestalt of this operation for endoscopes, the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 simply compared with the former can be done.

[0020] Furthermore, other treatment implements thicker than the bore of the tube 1 with outside in a coelome with the gestalt of this operation, For example, since exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body, and inserts balun die RETA 16 in the inside of the body can be performed when inserting balun die RETA 16 A thick treatment implement can also be used without restricting the treatment implement which can be used to the bore of the tube 1 with outside by the endoscopic operation. Therefore, there is effectiveness which can increase the application case of the endoscopic technique.

[0021] Moreover, since the tube 1 with outside should just have the bore which can insert guide wire 14, it can make small the outer diameter of the tube 1 with outside, and, therefore, does not reduce the insertion nature and the operability of an endoscope 2. Conventionally, the technique which was being performed blindly, for example, the example of a balun escape of achalasia (achalasia) etc., can carry out now under accepting reality of an endoscope 2 under an X-ray, and, therefore, safety improves.

[0022] Moreover, drawing 5 shows the gestalt of operation of the 2nd of this invention. The gestalt of this operation establishes

the wearing slot 21 of the tube 1 with outside in the peripheral face of the insertion section 3 of an endoscope 2, and changes it into the configuration which holds the tube 1 with outside of the gestalt (refer to drawing 1 (A) - (C) thru/or drawing 4 R> 4 (A), and (B)) of the 1st operation for endoscopes in this wearing slot 21. The wearing slot 21 of the peripheral face of this insertion section 3 is formed in the magnitude which is extent which can hold the tube 1 with outside whole.

[0023] Moreover, the tube stop ring (engagement section) 22 which engages with the point of the insertion section 3 of an endoscope 2 the tube 1 with outside held in the wearing slot 21 of the insertion section 3 possible [ engaging and releasing ] is formed. And the tube 1 with outside is engaged possible [ engaging and releasing ] by pinching the tube 1 with outside between this tube stop ring 22 and the wearing slot 21 of the insertion section 3.

[0024] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. Namely, while establishing the wearing slot 21 of the tube 1 with outside in the peripheral face of the insertion section 3 of an endoscope 2 with the gestalt of this operation and holding the tube 1 with outside of the gestalt of the 1st operation for endoscopes in this wearing slot 21 The tube 1 with outside is made to be engaged possible [ engaging and releasing ] by forming the tube stop ring 22 in the point of the insertion section 3 of an endoscope 2, and pinching the tube 1 with outside between this tube stop ring 22 and the wearing slot 21 of the insertion section 3. And hauling actuation of the body 8 of a tube is carried out at a hand side, and he draws out the body 8 of a tube of the tube 1 with outside to a hand side from between the tube stop ring 22 and the wearing slots 21 of the insertion section 3, and is trying to make engagement in the insertion section 3 of an endoscope 2, and the tube 1 with outside cancel according to this operating physical force in the condition of having made the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside grasping. Therefore, since the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body can be done without carrying out extraction of the insertion section 3 of an endoscope 2 from a patient's inside of the body like [ the tube 1 with outside of the gestalt of this operation for endoscopes ] the gestalt of the 1st operation, the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 simply compared with the former can be done.

[0025] Furthermore, other treatment implements thicker than the bore of the tube 1 with outside in a coelome also with the gestalt of this operation. For example, the guide wire 14 inserted in the tube 1 with outside when balun die RETA 16 was inserted is made a guide. Since exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body, and inserts balun die RETA 16 in the inside of the body can be performed A thick treatment implement can also be used without restricting the treatment implement which can be used to the bore of the tube 1 with outside by the endoscopic operation. Therefore, there is effectiveness which can increase the application case of the endoscopic technique.

[0026] Moreover, since the with tube 1 is held in the wearing slot 21 formed in the peripheral face of the insertion section 3 of an endoscope 2 outside the gestalt of this operation, the tube 1 with outside is not projected on the outside of the insertion section 3 of an endoscope 2. Therefore, improvement in the workability which inserts the insertion section 3 of an endoscope 2 into a coelome where the outside of the insertion section 3 of an endoscope 2 is equipped with the tube 1 with outside can be aimed at.

[0027] Moreover, drawing 6 (A), (B), and drawing 7 show the gestalt of operation of the 3rd of this invention. The gestalt of this operation changes the configuration of the tube 1 with outside of the gestalt (refer to drawing 1 (A) - (C) thru/or drawing 4 (A), and (B)) of the 1st operation for endoscopes as follows.

[0028] That is, the engagement heights 31 protrude on the point peripheral face of the tube 1 with outside with the gestalt of this operation. The leg 32 of the shape of an abbreviation triangle which becomes broad is formed as are shown in these engagement heights 31 at drawing 6 (A) and it separates from a joint with the peripheral face of the tube 1 with outside.

[0029] Moreover, the engagement heights 31 of the tube 1 with outside and the engagement crevice 34 of a corresponding configuration are formed in the tube stop ring 33 attached in the point of the insertion section 3 of an endoscope 2. And outside the gestalt of this operation, the body 8 of a tube of the with tube 1 is in the condition that the engagement heights 31 were inserted in the engagement crevice 34 of the tube stop ring 33, as shown in drawing 6 (A) and (B), and it is engaged possible [ engaging and releasing ] according to frictional force.

[0030] Moreover, by pulling and operating the body 8 of a tube to a hand side, where the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside is grasped, as the operating physical force at this time shows to drawing 7, the engagement heights 31 of the tube 1 with outside are drawn out from the engagement crevice 34 of the tube stop ring 33 at a hand side, and engagement in the insertion section 3 of an endoscope 2 and the tube 1 with outside is canceled.

[0031] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. Namely, the engagement heights 31 are protruded on the point peripheral face of the tube 1 with outside with the gestalt of this operation. In the condition of having made the engagement heights 31 of the tube 1 with outside inserting in the engagement crevice 34 of the tube stop ring 33 attached in the point of the insertion section 3 of an endoscope 2 While making it engaged possible [ engaging and releasing ] according to frictional force, where the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside is grasped He draws out the engagement heights 31 of the tube 1 with outside from the engagement crevice 34 of the tube stop ring 33 to a hand side, and is trying to make engagement in the insertion section 3 of an endoscope 2, and the tube 1 with outside cancel according to the operating physical force at this time by pulling and operating the body 8 of a tube to a hand side. Therefore, since the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body can be done without carrying out extraction of the insertion section 3 of an endoscope 2 from a patient's inside of the body with the gestalt of this operation as well as the gestalt of the 1st operation, the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 simply compared with the former can be done.

[0032] Furthermore, other treatment implements thicker than the bore of the tube 1 with outside in a coelome also with the gestalt of this operation. For example, since exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body, and inserts balun die RETA 16 in the inside of the body can be performed when inserting balun die RETA 16 A thick treatment implement can also be used without restricting the treatment implement which can be used to the bore of the tube 1 with outside by the endoscopic operation. Therefore, there is effectiveness which can increase the application case of the endoscopic technique.

[0033] Moreover, drawing 8 (A), (B), or drawing 10 shows the gestalt of operation of the 4th of this invention. The gestalt of this operation changes the configuration of the tube 1 with outside of the gestalt (refer to drawing 1 (A) - (C) thru/or drawing 4 (A), and (B)) of the 1st operation for endoscopes as follows.

[0034] That is, with the gestalt of this operation, the tube 1 with outside for endoscopes is formed with the 2-lumen tube 44 with which two lumens (through hole) 42 and 43 installed by shaft orientations in one tube wall 41 as shown in drawing 8 (A) and (B) are formed. Moreover, into one lumen 42 of the 2-lumen tube 44, a minor diameter treatment implement or guide wire 14 is inserted. Furthermore, the actuation wire 45 for immobilization is inserted in in the lumen 43 of another side of the 2-lumen tube 44.

[0035] The loop-formation-like engagement section 46 is formed in the point of this actuation wire 45. This engagement section 46 is formed in the major diameter rather than the outer-diameter dimension of the point of the insertion section 3 of an endoscope 2. And the engagement section 46 of the point of the actuation wire 45 is made to project from the inside of the lumen 43 of the 2-lumen tube 44 by carrying out extrusion actuation of the actuation wire 45 from a hand side at the time of use of the tube 1 with outside of the gestalt of this operation for endoscopes, as shown in drawing 9. Then, while making the point of the insertion section 3 of an endoscope 2 insert into the loop formation of the engagement section 46 of the actuation wire 45 By pulling and operating the actuation wire 45 to a hand side in this condition You extract the diameter of a loop formation of the engagement section 46 of the actuation wire 45, and make it engaged possible [engaging and releasing] according to frictional force in the condition of surrounding the point of the insertion section 3 of an endoscope 2 in the loop formation of the engagement section 46 of the actuation wire 45 as shown in drawing 8 (A) and (B).

[0036] Moreover, by carrying out extrusion actuation of the actuation wire 45 from a hand side, the diameter of a loop formation of the engagement section 46 of the actuation wire 45 is extended, and engagement in the insertion section 3 of an endoscope 2 and the tube 1 with outside is canceled.

[0037] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. Namely, the actuation wire 45 for immobilization is made to insert in in the lumen 43 of the 2-lumen tube 44 with the gestalt of this operation. The diameter of a loop formation of the engagement section 46 of the actuation wire 45 is extracted in the condition of having made the point of the insertion section 3 of an endoscope 2 inserting into the loop formation of the engagement section 46 formed in the point of this actuation wire 45. It is made to make it engaged possible [engaging and releasing] according to frictional force in the condition of surrounding the point of the insertion section 3 of an endoscope 2 in the loop formation of the engagement section 46 of the actuation wire 45 as shown in drawing 8 (A) and (B). And since the diameter of a loop formation of the engagement section 46 of the actuation wire 45 can be extended and engagement in the insertion section 3 of an endoscope 2 and the tube 1 with outside can be canceled by carrying out extrusion actuation of the actuation wire 45 from a hand side The activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body can be done without carrying out extraction of the insertion section 3 of an endoscope 2 from a patient's inside of the body with the gestalt of this operation as well as the gestalt of the 1st operation. Therefore, the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 simply compared with the former can be done.

[0038] Furthermore, other treatment implements thicker than the bore of the tube 1 with outside in a coelome also with the gestalt of this operation, For example, since exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body, and inserts balun die RETA 16 in the inside of the body can be performed when inserting balun die RETA 16 A thick treatment implement can also be used without restricting the treatment implement which can be used to the bore of the tube 1 with outside by the endoscopic operation. Therefore, there is effectiveness which can increase the application case of the endoscopic technique.

[0039] In addition, you may make it the configuration which hooks the loop formation of the engagement section 46 of the actuation wire 45 on the point of the insertion section 3 of an endoscope 2 and which prepares the hook-like hook section, for example and hooks the loop formation of the engagement section 46 of the actuation wire 45 on this hook section.

[0040] Furthermore, as for this invention, it is needless to say that deformation implementation can be variously carried out in the range which is not limited to the gestalt of the above-mentioned implementation and does not deviate from the summary of this invention. Next, other characteristic technical matters of this application are written in addition as follows.

Account (additional remark term 1) It is the tube with outside for endoscopes which has a juxtaposition edge and a distal end, and the fixed part which fixes a flexible tube to the distance periphery of an endoscope by at least one or more lumens in the tube with outside attached in an endoscope, and is characterized by the ability to remove a fixed part only by actuation of the juxtaposition section of a flexible tube.

[0041] (Additional remark term 2) Tube device for endoscopes with outside with the structure which can demount a tube (setting for example, in the technique) in the tube attached in the periphery of a scope if needed.

[0042] (The conventional technique of the additional remark terms 1 and 2) The with channel is being fixed on the medical tape etc. outside the former. For removing a channel with outside, extraction of the scope had to be carried out from the patient. Moreover, when it is dependent on the bore of a channel with outside and the treatment implement which can be used also enlarged the bore, the channel outer diameter with outside also became large, and the insertion nature of a scope was reduced.

[0043] (Technical problem which the additional remark terms 1 and 2 tend to solve) The so-called "channel with outside" conventionally attached in an endoscope was not able to remove a channel with outside in the technique. Therefore, it depended on the bore of a channel with outside for the treatment implement which can be used. Moreover, when the bore was enlarged, the insertion nature of a scope worsened.

[0044] (The purpose of the additional remark terms 1 and 2) They are the improvement in safety of the endoscopic technique, and expansion of an application case about expansion of the treatment implement which can be used.

[0045] (Effectiveness of the additional remark terms 1 and 2) Since the channel with outside (a thick treatment implement can also be used.) for which the treatment implement which can be used does not depend on the bore of a channel with outside should just have the bore which can insert guide wire, it can make a channel outer diameter small and, therefore, does not reduce the insertion nature and the operability of a scope. Conventionally, it can carry out now under an X-ray or accepting reality of the technique which was being performed blindly, for example, the example of a balun escape of achalasia etc., and, therefore, safety improves.

[0046]

[Effect of the Invention] Since an engagement discharge means by which the actuation by the side of the engagement section which engages the point of the body of a tube with the point of the insertion section of an endoscope possible [ engaging and releasing ], and the end face section of the body of a tube canceled engagement of the engagement section was established according to this invention, the class of treatment implement which can be used can be expanded and improvement in safety of the endoscopic technique and expansion of an application case can be aimed at.

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DESCRIPTION OF DRAWINGS

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## [Brief Description of the Drawings]

[Drawing 1] It is the front view in which the perspective view showing a part for the point of the insertion section of the endoscope with which (A) attached the tube with outside for endoscopes, the side elevation showing the part of the hand control unit by which (B) was connected with the end face section of the insertion section of an endoscope, and (C) show the apical surface of the insertion section of an endoscope by showing the gestalt of operation of the 1st of this invention.

[Drawing 2] It is the side elevation in which the activity which demounts the tube with outside of the gestalt of the 1st operation for endoscopes from a tube stop ring is explained to, and the perspective view in which (A) shows a part for the point of the insertion section of an endoscope, and (B) show the part of the hand control unit of an endoscope.

[Drawing 3] It is the side elevation in which the perspective view in which (A) shows a part for the point of the insertion section of an endoscope, and (B) show the part of the hand control unit of an endoscope by showing the condition that demounted the tube with outside of the gestalt of the 1st operation for endoscopes from the endoscope, and only the guidewire was left behind.

[Drawing 4] It is the side elevation in which the activity which replaces with the tube with outside of the gestalt of the 1st operation for endoscopes, and inserts other treatment implements is explained to, and the perspective view in which (A) shows a part for the point of the insertion section of an endoscope, and (B) show the part of the hand control unit of an endoscope.

[Drawing 5] Drawing of longitudinal section of an important section showing the gestalt of operation of the 2nd of this invention.

[Drawing 6] It is the perspective view in which the front view showing the apical surface of the insertion section of the endoscope with which (A) attached the tube with outside for endoscopes, and (B) show a part for the point of the insertion section of this endoscope by showing the gestalt of operation of the 3rd of this invention.

[Drawing 7] The perspective view showing a part for the point of the insertion section explaining the activity which demounts the tube with outside of the gestalt of the 3rd operation for endoscopes from a tube stop ring of an endoscope.

[Drawing 8] It is the perspective view in which the front view showing the apical surface of the insertion section of the endoscope with which (A) attached the tube with outside for endoscopes, and (B) show a part for the point of the insertion section of this endoscope by showing the gestalt of operation of the 4th of this invention.

[Drawing 9] The perspective view showing a part for the point of the insertion section explaining the activity which demounts the tube with outside of the gestalt of the 4th operation for endoscopes from the point of an endoscope of an endoscope.

[Drawing 10] The perspective view showing a part for the point of the insertion section explaining the activity which demounts the tube with outside of the gestalt of the 4th operation for endoscopes along with a guidewire of an endoscope.

## [Description of Notations]

2 Endoscope

3 Insertion Section

4 Hand Control Unit

8 Body of Tube

9 Tube Stop Ring (Engagement Section)

13 Grasping Section (Engagement Discharge Means)

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[Translation done.]



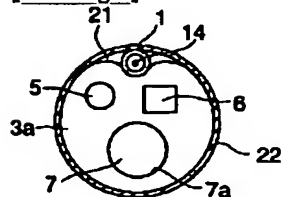
## \* NOTICES \*

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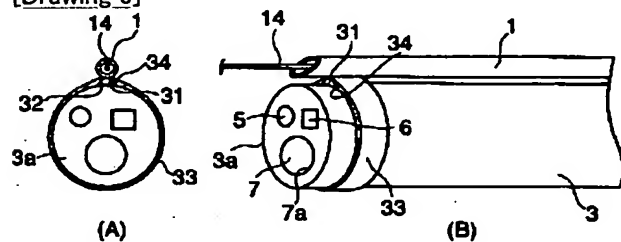
- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
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## DRAWINGS

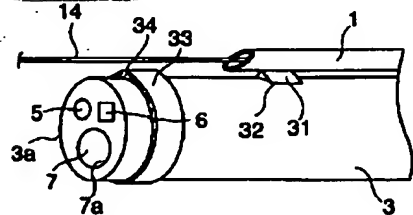
[Drawing 5]



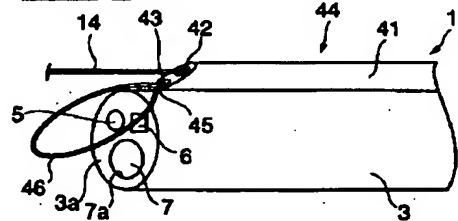
[Drawing 6]



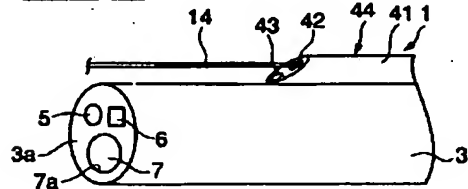
[Drawing 7]



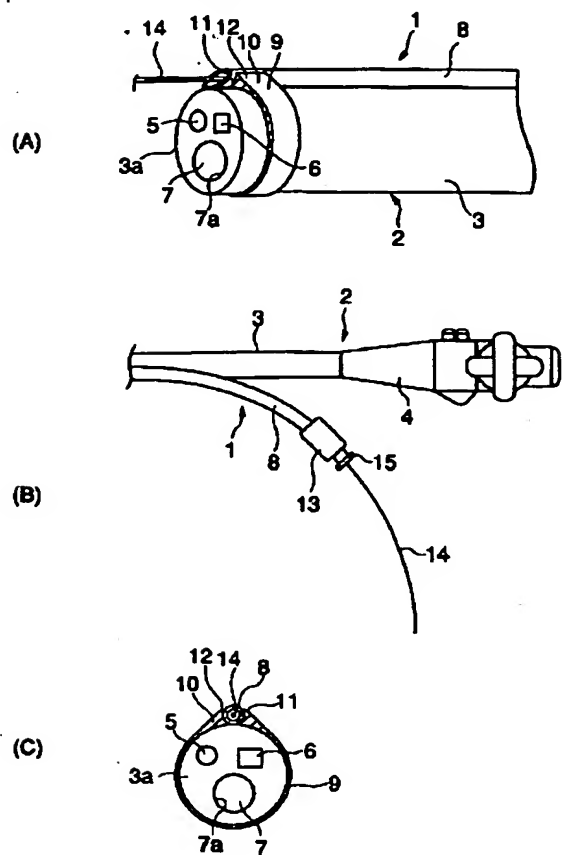
[Drawing 9]



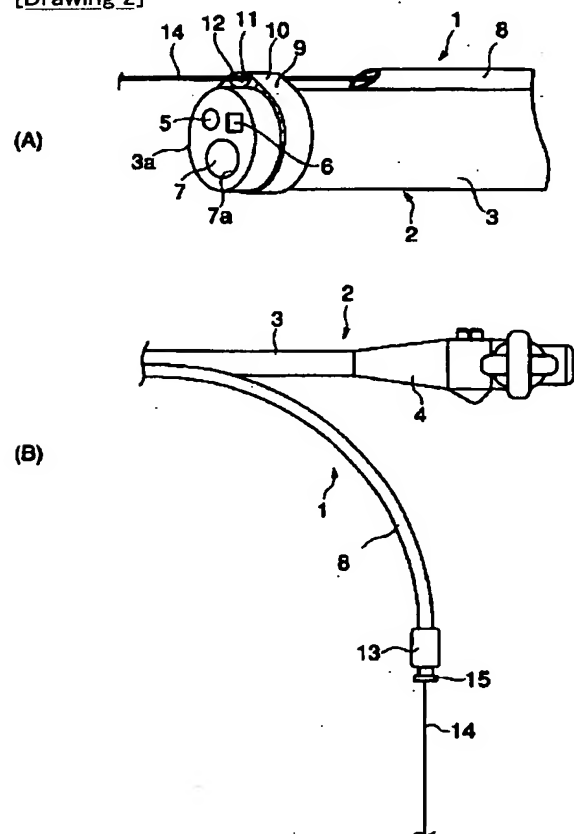
[Drawing 10]



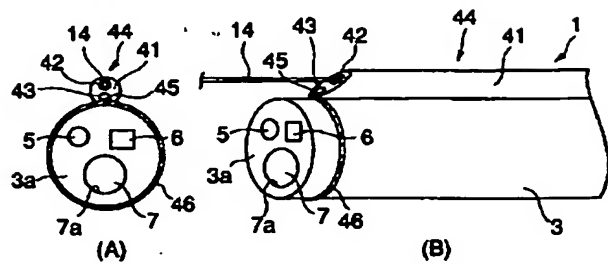
[Drawing 1]



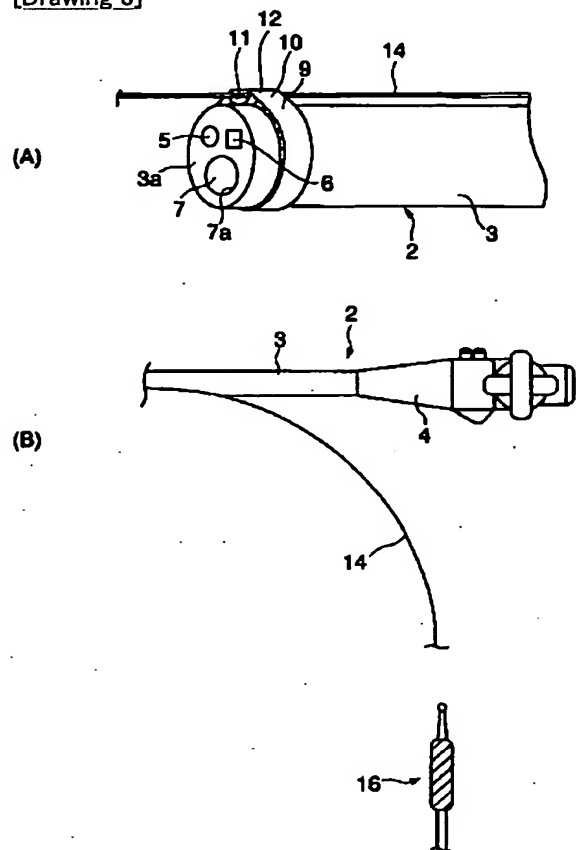
[Drawing 2]



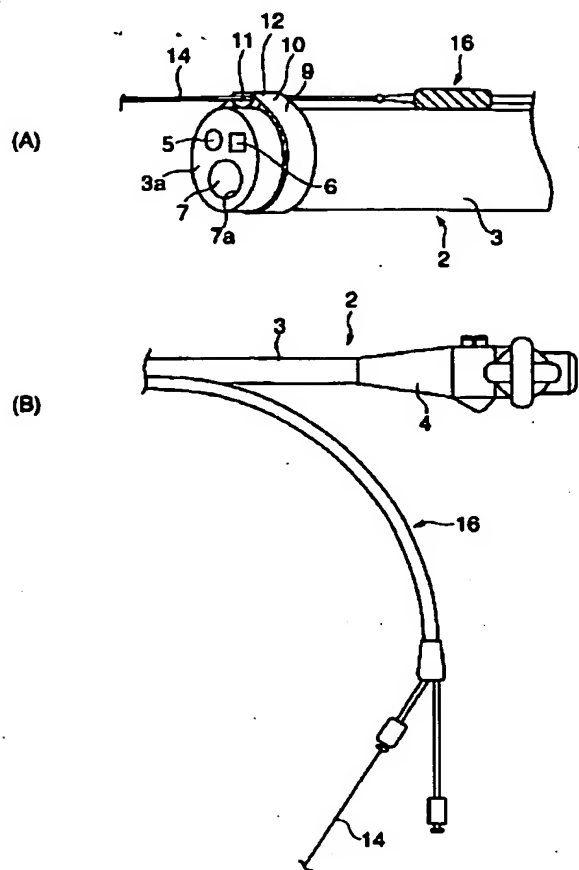
[Drawing 8]



[Drawing 3]



[Drawing 4]



[Translation done.]

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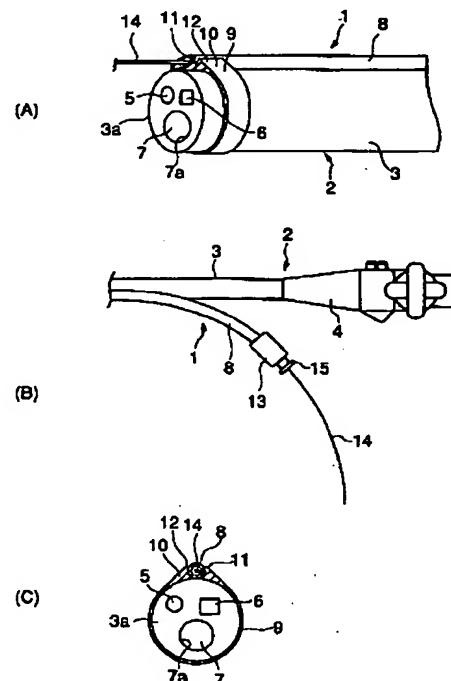
Fターム (参考) 4C061 GG14 JJ06

(54) 【発明の名称】 内視鏡用外付チューブ

(57) 【要約】

【課題】 本発明は、使用できる処置具の種類を拡大することができ、内視鏡的手技の安全性向上、適用症例の拡大を図ることができる内視鏡用外付チューブを提供することを最も主要な特徴とする。

【解決手段】 チューブ本体8の先端部を内視鏡2の挿入部3の先端部に係脱可能に係合するチューブ固定リング9を設け、チューブ本体8の基端部側の把持部13の操作によってチューブ固定リング9の係合を解除するようにしたものである。



## 【特許請求の範囲】

【請求項1】 内視鏡の挿入部の先端部から基端部側の  
手元操作部側まで前記内視鏡の挿入部に沿って延設され  
る可撓性チューブによってチューブ本体が形成され、前  
記内視鏡の挿入部に前記チューブ本体が取り外し可能に  
取付けられる内視鏡用外付チューブにおいて、  
前記チューブ本体の先端部を前記内視鏡の挿入部の先端  
部に係脱可能に係合する係合部と、  
前記チューブ本体の基端部側の操作によって前記係合部  
の係合を解除する係合解除手段とを具備することを特徴  
とする内視鏡用外付チューブ。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、内視鏡に着脱可能  
に取付けられる内視鏡用外付チューブに関する。

## 【0002】

【従来の技術】一般に、内視鏡の挿入部に必要に応じて  
着脱可能に取付けられ、処置具の挿入をガイドする内視  
鏡用外付チューブが例えば、特開平11-192203  
号公報や、実登2558354号公報などに示されてい  
る。ここで、特開平11-192203号公報には外付  
チューブをゴムバンドや、メディカルテープ等で固定し  
たり、リング状の取付け用キャップなどを介して内視鏡  
の挿入部に取付ける構成が示されている。さらに、実登  
2558354号公報には外付チューブの先端部にシー  
ト状の取付け部を設け、この取付け部を両面粘着テープ  
などによって内視鏡の挿入部に取付ける構成が示されて  
いる。

## 【0003】

【発明が解決しようとする課題】上記従来構成の外付チ  
ューブはゴムバンドや、メディカルテープや、両面粘着  
テープなどで内視鏡の挿入部に固定したり、取付け用キ  
ャップなどを介して内視鏡の挿入部に固定されている。  
そのため、内視鏡の挿入部に取付けられた外付チューブ  
を内視鏡の挿入部から取外す場合には一旦、内視鏡を患  
者の体内から抜去した状態で、体外でゴムバンドや、メ  
ディカルテープや、両面粘着テープなどを取外したり、  
取付け用キャップなどを取外す面倒な作業を行う必要が  
あるので、その作業に時間がかかり、内視鏡に取付けら  
れている外付チューブを手技中に外すことは難しい問  
題がある。

【0004】また、患者の体内に内視鏡が挿入された状  
態では外付チューブを通して体内に挿入できる処置具の  
種類は外付チューブの内径よりも小径なものに制限され  
るので、外付チューブの内径よりも大径な処置具を使用  
することができない問題がある。そのため、内視鏡の手  
技の適用症例が制限される問題がある。

【0005】なお、大径な処置具を使用するために外付  
チューブの内径を大きくした場合にはこの外付チューブ  
の外径も大きくなるので、内視鏡の挿入性を低下させる

問題がある。

【0006】本発明は上記事情に着目してなされたもの  
で、その目的は、使用できる処置具の種類を拡大するこ  
とができ、内視鏡的手技の安全性向上、適用症例の拡大  
を図ることができる内視鏡用外付チューブを提供するこ  
とにある。

## 【0007】

【課題を解決するための手段】本発明は、内視鏡の挿入  
部の先端部から基端部側の手元操作部側まで前記内視鏡  
の挿入部に沿って延設される可撓性チューブによってチ  
ューブ本体が形成され、前記内視鏡の挿入部に前記チ  
ューブ本体が取り外し可能に取付けられる内視鏡用外付チ  
ューブにおいて、前記チューブ本体の先端部を前記内視  
鏡の挿入部の先端部に係脱可能に係合する係合部と、前  
記チューブ本体の基端部側の操作によって前記係合部の  
係合を解除する係合解除手段とを具備することを特徴と  
する内視鏡用外付チューブである。そして、本発明で  
は、内視鏡の使用時には内視鏡の挿入部の先端部に係合  
部を係合させ、この状態で、外付チューブのチューブ本  
体内に処置具を挿通させる。また、外付チューブのチ  
ューブ本体を内視鏡の挿入部から取外す場合にはチューブ  
本体の基端部側の係合解除手段の操作によって係合部の  
係合を解除するようにしたものである。

## 【0008】

【発明の実施の形態】以下、本発明の第1の実施の形態  
を図1(A)～(C)乃至図4(A)、(B)を参照し  
て説明する。図1(A)は本実施の形態の内視鏡用外付  
チューブ1を取付けた内視鏡2の挿入部3の先端部分、  
図1(B)は内視鏡2の挿入部3の基端部に連結された  
手元操作部4の部分それぞれを示すものである。

【0009】さらに、図1(C)に示すように内視鏡2  
の挿入部3の先端面3aには照明レンズが配設された照  
明窓部5や、対物レンズが配設された観察窓部6や、処  
置具挿通チャンネル7の先端開口部7aなどが配設され  
ている。

【0010】また、内視鏡用外付チューブ1は内視鏡2  
の挿入部3の先端部から基端部側の手元操作部4側まで  
内視鏡2の挿入部3に沿って延設される可撓性チューブ  
によってチューブ本体8が形成されている。さらに、こ  
の内視鏡用外付チューブ1には内視鏡2の挿入部3の先  
端部に取付けられるチューブ固定リング(係合部)9が  
設けられている。このチューブ固定リング9は例えば摩  
擦による固定、接着などの手段で挿入部3の先端部外周  
面に固定されている。また、挿入部3の一部がチューブ  
固定リング9を兼用しても良い。

【0011】このチューブ固定リング9には図1(C)  
に示すように周方向の一部に外向きに突設された突設部  
10が形成されている。この突設部10には外付チ  
ューブ1の係合溝11が形成されている。この係合溝11は  
外付チューブ1のチューブ本体8の断面形状と略対応す

る形状に形成されている。ここで、係合溝11の開口端部には外付チューブ1の直径よりも溝幅が狭い外付チューブ1の抜け防止部12が形成されている。そして、外付チューブ1のチューブ本体8はこの係合溝11に挿入された状態で、摩擦力によって係脱可能に係合されるようになっている。この係合時には係合溝11の抜け防止部12によって外付チューブ1のチューブ本体8が係合溝11の開口端部から外部側に抜け落ちることが防止されている。

【0012】また、外付チューブ1のチューブ本体8の基端部には大径な把持用の把持部（係合解除手段）13が形成されている。この把持部13の末端部には細径の処置具、或いはガイドワイヤー14などを導入するための口金部15が配設されている。

【0013】次に、上記構成の本実施の形態の内視鏡用外付チューブ1の作用について説明する。内視鏡下手術で、内視鏡2の挿入部3に本実施の形態の内視鏡用外付チューブ1を装着して使用する場合には、例えば、患者の体外で予め外付チューブ1のチューブ本体8内にガイドワイヤー14が挿入された状態にセットされる。

【0014】その後、内視鏡2の挿入部3の先端部に固定されたチューブ固定リング9の係合溝11に予め外付チューブ1のチューブ本体8の先端部を挿入する状態で係合させる。これにより、図1（A）、（B）に示すように内視鏡2の挿入部3の先端部から基端部側の手元操作部4側まで挿入部3に沿って外付チューブ1のチューブ本体8が延設された状態にセットされる。

【0015】この状態で、内視鏡2の挿入部3が患者の体腔内に挿入される。そして、患者の体腔内の目的の場所に内視鏡2の挿入部3が挿入された後、必要に応じて外付チューブ1の内部に外付チューブ1の内径よりも細径の処置具が挿入される。このとき、外付チューブ1の内部に挿入される処置具はチューブ本体8内のガイドワイヤー14にガイドされた状態で体内に挿入される。

【0016】また、図3（B）に示すように体腔内に外付チューブ1の内径よりも太い他の処置具、例えばバルーンダイレーター16を挿入する場合には外付チューブ1を内視鏡2の挿入部3から取外してバルーンダイレーター16を体内に挿入する処置具の交換作業が行われる。この交換作業時にはガイドワイヤー14が使用され、次の通り行われる。

【0017】まず、外付チューブ1のチューブ本体8の基端部の把持部13が把持された状態で、チューブ本体8が手元側に引っ張り操作される。この操作力によって図2（A）に示すようにチューブ固定リング9の係合溝11から外付チューブ1のチューブ本体8が手元側に引き抜かれ、内視鏡2の挿入部3と外付チューブ1との係合が解除される。この状態で、ガイドワイヤー14はそのまま残し、続いてこのガイドワイヤー14にガイドされた状態で外付チューブ1のみを体外に取出す作業が行

われる。

【0018】さらに、図3（B）に示すように外付チューブ1の取り出し後、図4（B）に示すようにガイドワイヤー14をガイドにして別の処置具、例えばバルーンダイレーター16が体腔内に挿入される。このとき、例えば内視鏡2の処置具挿通チャンネル7を通して体内に挿入される把持鉗子などによって内視鏡2の観察下でガイドワイヤー14の先端部を把持した状態で外付チューブ1とバルーンダイレーター16との交換作業が行われる。なお、必ずしもガイドワイヤー14の先端部を把持鉗子などによって把持する必要はない。例えば、外付チューブ1の長さの2倍程度の長さのガイドワイヤー14を使用することにより、ガイドワイヤー14の手元側を把持した状態で外付チューブ1とバルーンダイレーター16との交換作業を行なうことができる。

【0019】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態の内視鏡用外付チューブ1では内視鏡2の挿入部3の先端部外周面に固定されるチューブ固定リング9に外付チューブ1の係合溝11を形成し、外付チューブ1のチューブ本体8をこの係合溝11に係脱可能に係合させるとともに、外付チューブ1のチューブ本体8の基端部の把持部13を把持させた状態で、チューブ本体8を手元側に引っ張り操作させ、この操作力によってチューブ固定リング9の係合溝11から外付チューブ1のチューブ本体8を手元側に引き抜いて内視鏡2の挿入部3と外付チューブ1との係合を解除させるようにしている。そのため、本実施の形態の内視鏡用外付チューブ1では内視鏡2の挿入部3を患者の体内から抜去することなく、患者の体内で内視鏡2の挿入部3から外付チューブ1を取外す作業を行うことができるので、従来に比べて簡単に内視鏡2の挿入部3から外付チューブ1を取外す作業を行うことができる。

【0020】さらに、本実施の形態では体腔内に外付チューブ1の内径よりも太い他の処置具、例えばバルーンダイレーター16を挿入する場合には患者の体内で外付チューブ1を内視鏡2の挿入部3から取外してバルーンダイレーター16を体内に挿入する処置具の交換作業を行うことができるので、内視鏡下手術で、使用できる処置具が外付チューブ1の内径に制限されることなく、太い処置具も使用することができる。そのため、内視鏡的手技の適用症例を増やすことができる効果がある。

【0021】また、外付チューブ1はガイドワイヤー14を挿入できる内径を有していれば良いので、外付チューブ1の外径を小さくでき、よって内視鏡2の挿入性・操作性を低下させることがない。そのため、従来、X線下、もしくは盲目的に行っていた手技、例えばアカラジア（achalasia）のバルーン拡張例等が内視鏡2の直視下で行えるようになり、よって、安全性が向上する。

【0022】また、図5は本発明の第2の実施の形態を示すものである。本実施の形態は内視鏡2の挿入部3の

外周面に外付チューブ1の装着溝21を設け、この装着溝21に第1の実施の形態(図1(A)~(C)乃至図4(A)、(B)参照)の内視鏡用外付チューブ1を収容する構成に変更したものである。この挿入部3の外周面の装着溝21は外付チューブ1全体が収容できる程度の大きさに形成されている。

【0023】また、内視鏡2の挿入部3の先端部には挿入部3の装着溝21に収容された外付チューブ1に係脱可能に係合するチューブ固定リング(係合部)22が設けられている。そして、このチューブ固定リング22と挿入部3の装着溝21との間で外付チューブ1を挟持することにより、外付チューブ1に係脱可能に係合するようになっている。

【0024】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態では内視鏡2の挿入部3の外周面に外付チューブ1の装着溝21を設け、この装着溝21に第1の実施の形態の内視鏡用外付チューブ1を収容するとともに、内視鏡2の挿入部3の先端部にチューブ固定リング22を設け、このチューブ固定リング22と挿入部3の装着溝21との間で外付チューブ1を挟持することにより、外付チューブ1に係脱可能に係合するようにしている。そして、外付チューブ1のチューブ本体8の基端部の把持部13を把持させた状態で、チューブ本体8を手元側に引っ張り操作させ、この操作力によってチューブ固定リング22と挿入部3の装着溝21との間から外付チューブ1のチューブ本体8を手元側に引き抜いて内視鏡2の挿入部3と外付チューブ1との係合を解除させるようにしている。そのため、本実施の形態の内視鏡用外付チューブ1でも第1の実施の形態と同様に内視鏡2の挿入部3を患者の体内から抜去することなく、患者の体内で内視鏡2の挿入部3から外付チューブ1を取外す作業を行うことができるので、従来に比べて簡単に内視鏡2の挿入部3から外付チューブ1を取外す作業を行うことができる。

【0025】さらに、本実施の形態でも体腔内に外付チューブ1の内径よりも太い他の処置具、例えばバルーンダイレーター16を挿入する場合には外付チューブ1に挿入されたガイドワイヤー14をガイドにして患者の体内で外付チューブ1を内視鏡2の挿入部3から取外してバルーンダイレーター16を体内に挿入する処置具の交換作業を行うことができるので、内視鏡下手術で、使用できる処置具が外付チューブ1の内径に制限されることなく、太い処置具も使用することができる。そのため、内視鏡的手技の適用症例を増やすことができる効果がある。

【0026】また、本実施の形態の外付チューブ1は内視鏡2の挿入部3の外周面に形成された装着溝21に収容されているので、内視鏡2の挿入部3の外側に外付チューブ1が突出されることがない。そのため、内視鏡2の挿入部3の外側に外付チューブ1を装着した状態で内

視鏡2の挿入部3を体腔内に挿入する作業性の向上を図ることができる。

【0027】また、図6(A)、(B)および図7は本発明の第3の実施の形態を示すものである。本実施の形態は第1の実施の形態(図1(A)~(C)乃至図4

(A)、(B)参照)の内視鏡用外付チューブ1の構成を次の通り変更したものである。

【0028】すなわち、本実施の形態では外付チューブ1の先端部外周面に係合凸部31が突設されている。この係合凸部31には図6(A)に示すように外付チューブ1の外周面との接合部から離れるにしたがって幅広になる略三角形の脚部32が形成されている。

【0029】また、内視鏡2の挿入部3の先端部に取付けられるチューブ固定リング33には外付チューブ1の係合凸部31と対応する形状の係合凹部34が形成されている。そして、本実施の形態の外付チューブ1のチューブ本体8は図6(A)、(B)に示すように係合凸部31がチューブ固定リング33の係合凹部34に挿入された状態で、摩擦力によって係脱可能に係合されるようになっている。

【0030】また、外付チューブ1のチューブ本体8の基端部の把持部13を把持した状態で、チューブ本体8を手元側に引っ張り操作することにより、このときの操作力によって図7に示すようにチューブ固定リング33の係合凹部34から外付チューブ1の係合凸部31が手元側に引き抜かれ、内視鏡2の挿入部3と外付チューブ1との係合が解除されるようになっている。

【0031】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態では外付チューブ1の先端部外周面に係合凸部31を突設し、内視鏡2の挿入部3の先端部に取付けられるチューブ固定リング33の係合凹部34に外付チューブ1の係合凸部31を挿入させた状態で、摩擦力によって係脱可能に係合させるとともに、外付チューブ1のチューブ本体8の基端部の把持部13を把持した状態で、チューブ本体8を手元側に引っ張り操作することにより、このときの操作力によってチューブ固定リング33の係合凹部34から外付チューブ1の係合凸部31を手元側に引き抜いて内視鏡2の挿入部3と外付チューブ1との係合を解除させるようにしている。そのため、本実施の形態でも第1の実施の形態と同様に内視鏡2の挿入部3を患者の体内から抜去することなく、患者の体内で内視鏡2の挿入部3から外付チューブ1を取外す作業を行うことができるので、従来に比べて簡単に内視鏡2の挿入部3から外付チューブ1を取外す作業を行うことができる。

【0032】さらに、本実施の形態でも体腔内に外付チューブ1の内径よりも太い他の処置具、例えばバルーンダイレーター16を挿入する場合には患者の体内で外付チューブ1を内視鏡2の挿入部3から取外してバルーンダイレーター16を体内に挿入する処置具の交換作業を



行うことができるので、内視鏡下手術で、使用できる処置具が外付チューブ1の内径に制限されることなく、太い処置具も使用することができる。そのため、内視鏡的手技の適用症例を増やすことができる効果がある。

【0033】また、図8(A)、(B)乃至図10は本発明の第4の実施の形態を示すものである。本実施の形態は第1の実施の形態(図1(A)~(C)乃至図4

(A)、(B)参照)の内視鏡用外付チューブ1の構成を次の通り変更したものである。

【0034】すなわち、本実施の形態では図8(A)、(B)に示すように1つのチューブ壁41内に軸方向に延設された2つのルーメン(貫通穴)42、43が形成されている2ルーメンチューブ44によって内視鏡用外付チューブ1が形成されている。また、2ルーメンチューブ44の一方のルーメン42内には小径な処置具、或いはガイドワイヤ14などが挿入されるようになっている。さらに、2ルーメンチューブ44の他方のルーメン43内には固定用の操作ワイヤ45が挿通されている。

【0035】この操作ワイヤ45の先端部にはループ状の係合部46が形成されている。この係合部46は内視鏡2の挿入部3の先端部の外径寸法よりも大径に形成されている。そして、本実施の形態の内視鏡用外付チューブ1の使用時には手元側から操作ワイヤ45を挿出操作することにより、図9に示すように2ルーメンチューブ44のルーメン43内から操作ワイヤ45の先端部の係合部46を突出させる。その後、操作ワイヤ45の係合部46のループ内に内視鏡2の挿入部3の先端部を挿入させるとともに、この状態で操作ワイヤ45を手元側に引っ張り操作することにより、操作ワイヤ45の係合部46のループ径を絞り、図8(A)、(B)に示すように内視鏡2の挿入部3の先端部を操作ワイヤ45の係合部46のループ内に囲む状態で、摩擦力によって係脱可能に係合させるようになっている。

【0036】また、手元側から操作ワイヤ45を挿出操作することにより、操作ワイヤ45の係合部46のループ径を広げて内視鏡2の挿入部3と外付チューブ1との係合が解除されるようになっている。

【0037】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態では2ルーメンチューブ44のルーメン43内に固定用の操作ワイヤ45を挿通させ、この操作ワイヤ45の先端部に形成された係合部46のループ内に内視鏡2の挿入部3の先端部を挿入させた状態で操作ワイヤ45の係合部46のループ径を絞り、図8(A)、(B)に示すように内視鏡2の挿入部3の先端部を操作ワイヤ45の係合部46のループ内に囲む状態で、摩擦力によって係脱可能に係合させるようにしたものである。そして、手元側から操作ワイヤ45を挿出操作することにより、操作ワイヤ45の係合部46のループ径を広げて内視鏡2の挿入部3と外付

チューブ1との係合を解除することができるので、本実施の形態でも第1の実施の形態と同様に内視鏡2の挿入部3を患者の体内から抜去することなく、患者の体内で内視鏡2の挿入部3から外付チューブ1を取外す作業を行うことができる。そのため、従来に比べて簡単に内視鏡2の挿入部3から外付チューブ1を取外す作業を行うことができる。

【0038】さらに、本実施の形態でも体腔内に外付チューブ1の内径よりも太い他の処置具、例えばバルーンダイレーター16を挿入する場合には患者の体内で外付チューブ1を内視鏡2の挿入部3から取外してバルーンダイレーター16を体内に挿入する処置具の交換作業を行うことができるので、内視鏡下手術で、使用できる処置具が外付チューブ1の内径に制限されることなく、太い処置具も使用することができる。そのため、内視鏡的手技の適用症例を増やすことができる効果がある。

【0039】なお、内視鏡2の挿入部3の先端部に操作ワイヤ45の係合部46のループを引っ掛ける例えばフック状の引っ掛け部を設け、この引っ掛け部に操作ワイヤ45の係合部46のループを引っ掛ける構成にしても良い。

【0040】さらに、本発明は上記実施の形態に限定されるものではなく、本発明の要旨を逸脱しない範囲で種々変形実施できることは勿論である。次に、本出願の他の特徴的な技術事項を下記の通り付記する。

記

(付記項1) 内視鏡に取付けられる外付チューブにおいて、少なくとも一つ以上の内腔で、近位端、遠位端とを有した可撓性チューブと、可撓性チューブを内視鏡の遠位外周に固定する固定部とを有し、固定部は可撓性チューブの近位部の操作のみで取り外しが可能なことを特徴とする内視鏡用外付チューブ。

【0041】(付記項2) スコープの外周に取付けられるチューブにおいて、必要に応じて(例えば手技中において)チューブを取外すことが可能な構造を有した内視鏡用外付チューブ機構。

【0042】(付記項1、2の従来技術) 従来の外付チャンネルはメディカルテープ等で固定されている。外付チャンネルを外すにはスコープを患者から抜去しなければならなかった。また、使える処置具も外付チャンネルの内径に依存され、内径を大きくすると外付チャンネル外径も大きくなり、スコープの挿入性を低下させていた。

【0043】(付記項1、2が解決しようとする課題) 従来内視鏡に取付けるいわゆる「外付チャンネル」は、手技中に外付チャンネルを外すことができなかった。よって、使える処置具は、外付チャンネルの内径に依存されていた。また、内径を大きくするとスコープの挿入性が悪くなった。

【0044】(付記項1、2の目的) 使用できる処置

具の拡大を内視鏡的手技の安全性向上、適用症例の拡大。

【0045】(付記項1、2の効果) 使用できる処置具が外付チャンネルの内径に依存されない(太い処置具も使える。)外付チャンネルはガイドワイヤーを挿入できる内径を有していれば良いので、チャンネル外径を小さくでき、よってスコープの挿入性・操作性を低下させることがない。従来、X線下、もしくは盲目的に行っていた手技、例えばアカラジアのバルーン拡張例等が直視下で行えるようになり、よって、安全性が向上する。

【0048】

【発明の効果】本発明によれば、チューブ本体の先端部を内視鏡の挿入部の先端部に係脱可能に係合する係合部と、チューブ本体の基端部側の操作によって係合部の係合を解除する係合解除手段とを設けたので、使用できる処置具の種類を拡大することができ、内視鏡的手技の安全性向上、適用症例の拡大を図ることができる。

【図面の簡単な説明】

【図1】 本発明の第1の実施の形態を示すもので、

(A)は内視鏡用外付チューブを取付けた内視鏡の挿入部の先端部分を示す斜視図、(B)は内視鏡の挿入部の基端部に連結された手元操作部の部分を示す側面図、

(C)は内視鏡の挿入部の先端面を示す正面図。

【図2】 第1の実施の形態の内視鏡用外付チューブをチューブ固定リングから取外す作業を説明するもので、

(A)は内視鏡の挿入部の先端部分を示す斜視図、

(B)は内視鏡の手元操作部の部分を示す側面図。

【図3】 第1の実施の形態の内視鏡用外付チューブを内視鏡から取外してガイドワイヤーのみが残された状態を示すもので、(A)は内視鏡の挿入部の先端部分を示す斜視図、(B)は内視鏡の手元操作部の部分を示す側面図

\*図。

【図4】 第1の実施の形態の内視鏡用外付チューブに代えて他の処置具を挿入する作業を説明するもので、

(A)は内視鏡の挿入部の先端部分を示す斜視図、

(B)は内視鏡の手元操作部の部分を示す側面図。

【図5】 本発明の第2の実施の形態を示す要部の縦断面図。

【図6】 本発明の第3の実施の形態を示すもので、

(A)は内視鏡用外付チューブを取付けた内視鏡の挿入部の先端面を示す正面図、(B)は同内視鏡の挿入部の先端部分を示す斜視図。

【図7】 第3の実施の形態の内視鏡用外付チューブをチューブ固定リングから取外す作業を説明する内視鏡の挿入部の先端部分を示す斜視図。

【図8】 本発明の第4の実施の形態を示すもので、

(A)は内視鏡用外付チューブを取付けた内視鏡の挿入部の先端面を示す正面図、(B)は同内視鏡の挿入部の先端部分を示す斜視図。

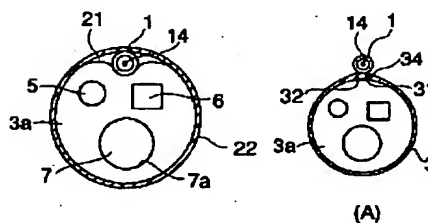
【図9】 第4の実施の形態の内視鏡用外付チューブを内視鏡の先端部から取外す作業を説明する内視鏡の挿入部の先端部分を示す斜視図。

【図10】 第4の実施の形態の内視鏡用外付チューブをガイドワイヤーに沿って取外す作業を説明する内視鏡の挿入部の先端部分を示す斜視図。

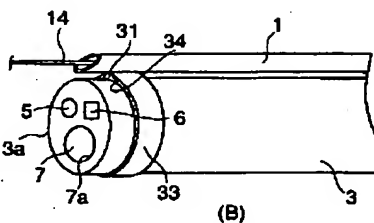
【符号の説明】

- 2 内視鏡
- 3 挿入部
- 4 手元操作部
- 8 チューブ本体
- 9 チューブ固定リング(係合部)
- 13 把持部(係合解除手段)

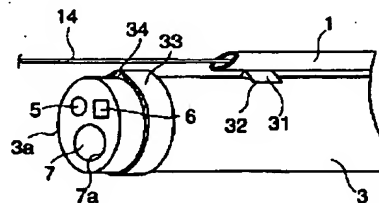
【図5】



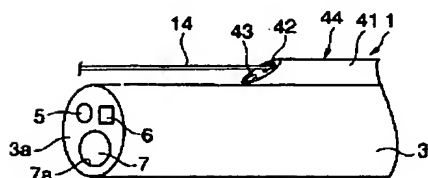
【図6】



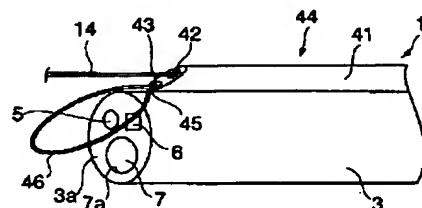
【図7】



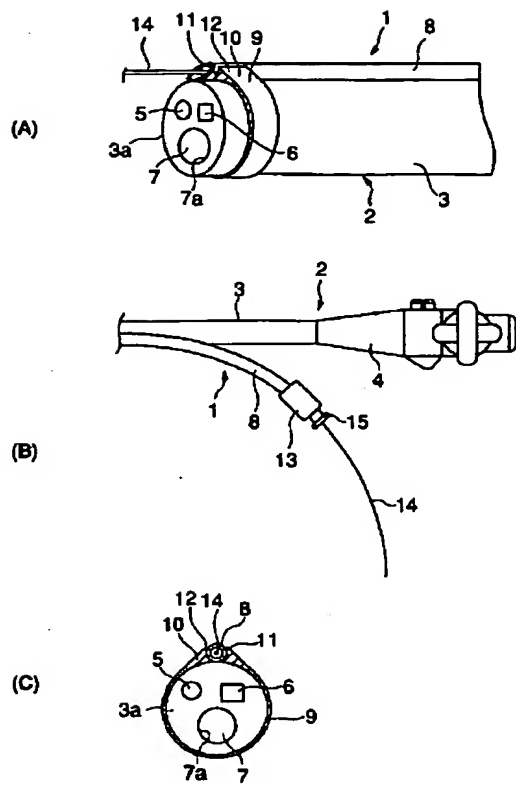
【図10】



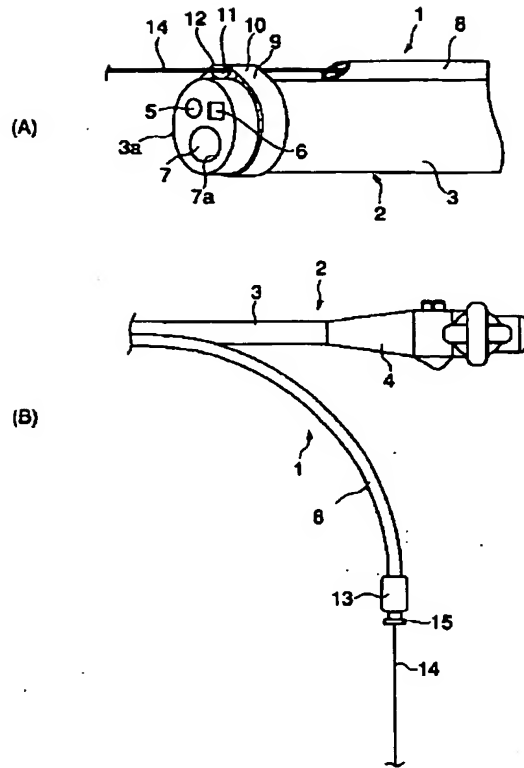
【図9】



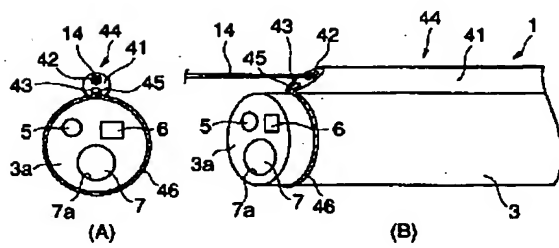
【図1】



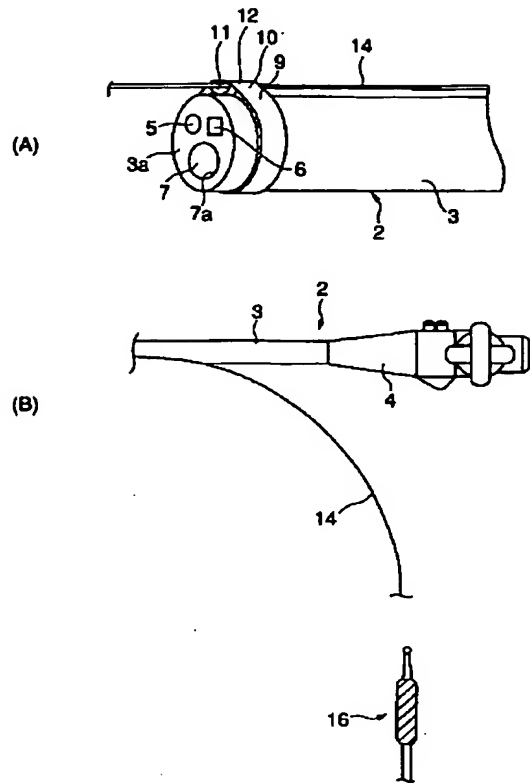
【図2】



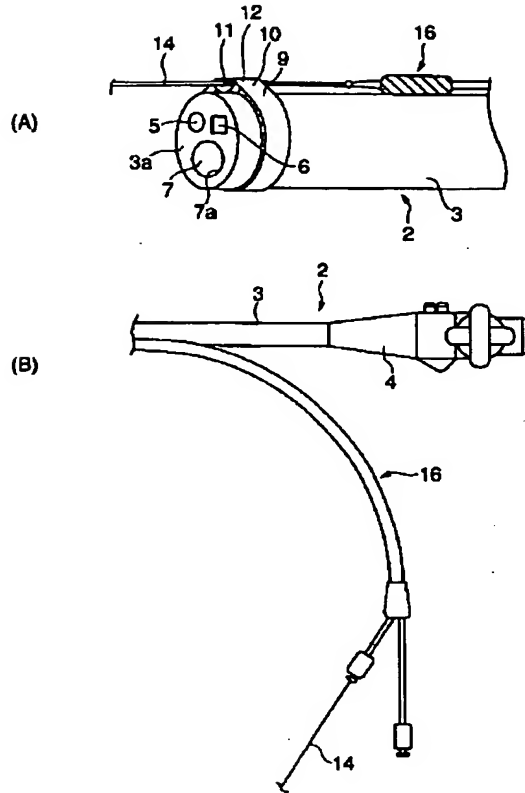
【図8】



【図3】



【図4】



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